ABSTRACT

It is an object of the invention to obtain a video encoder and a video decoder performing a highly accurate prediction of a picture, transformed by other than translation, within a short processing time in a small-scaled circuit. A video encoder for performing compression encoding of an input picture includes motion compensated prediction means for performing interframe motion detection. The motion compensated prediction means has a motion detector including a transformed block matching unit for transforming a reference picture portion into a picture portion having a predefined shape for performing motion detection and a motion compensator including a corresponding pel determinator for determining integer pels of real sample points of the transformed reference picture portion corresponding to an integer pel of the input picture block according to the motion parameters supplied from the motion detector as a result of the comparison so as to supply prediction picture data. The video encoder of the present invention can be combined with a video decoder having a motion compensator which performs the same operations as those in the video encoder to configure a video encoding and decoding system. Further, the video decoder uses half-